

ENGLISH TRANSLATION OF THE INTERNATIONAL APPLICATION
FOR NATIONAL PHASE SUBMISSION

Claims

1. A method for monitoring the operability of an injection system of an internal combustion engine, comprising a pressure accumulator, an injection valve connected to the pressure accumulator, a controllable fuel supply system which delivers fuel to the pressure accumulator, a pressure sensor which is connected to the pressure accumulator and measures the pressure in the pressure accumulator, a control unit to which the pressure in the pressure accumulator is fed via the pressure sensor and which controls the quantity of fuel delivered by the injection valve and supplied from the fuel supply system as a function of operating parameters of the internal combustion engine, wherein the quantity of fuel delivered by the injection valve is varied, the pressure then obtaining being measured, the pressure obtaining being compared with a setpoint pressure for the given operating conditions, and a malfunction source being detected depending on the deviation of the measured pressure from the comparison value and if the pressure is below the setpoint value.
2. The method as claimed in claim 1, characterized in that, if the injection quantity changes and the pressure is below setpoint in the pressure accumulator and approximately constant pressure obtains in the pressure accumulator, a pressure valve connected to the pressure accumulator and which cannot set the desired pressure is detected as the source of the fault.
3. The method as claimed in claim 1, characterized in that, if the injection quantity changes and the pressure is below setpoint in the pressure accumulator and the

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pressure in the pressure accumulator changes contrary to the change in the injection quantity, the fuel supply system which does not supply sufficient fuel is detected as the source of the fault.

4. The method as claimed in one of the claims 1 to 3, characterized in that the pressure is measured over a measuring period of 1 second and the time response of the pressure during the measuring period is compared with a setpoint response.
5. The method as claimed in one of claims 1 to 3, characterized in that, depending on the fault detected, an appropriate emergency program for control by the control unit is used, appropriate emergency programs being available to the control unit for the various malfunctions.